2015 MASTER CATALOG

Magnum Pro

M-10

Hydraulic Calibration Hand Pump

MVP-600

Pneumatic Calibration Combination Hand Pump

FEATURES

Range: 0-10,000 PSI (700 Bar)
Compatible with most hydraulic fluids, oils, H2O
Connections: 1/4" NPT/BSP
2 Year Quibble-Free Warranty
Weight: 3 lbs

Range: Vacuum 28"Hg to Pressure 600 PSI (40 Bar)
Compatible with all gauges and calibrators
Connections: 1/4" and 1/8" NPT/BSP
2 Year Quibble-Free Warranty
Weight: 2 lbs

DESCRIPTION

Utilizes a fully adjustable stroke control for quick priming, easy pumping, and fast pressure generation up to 10,000 psi (700 bar). The ergonomic handles provide extra comfort and reduce hand fatigue. The patented triple filtration system ensures pump operation in dirty conditions. The shatterproof reservoir and stainless steel construction guarantee leak free operation. The pump has over-sized check valves to provide smooth controlled operation. It uses a patented protective cage around the vent knob to prevent damage when dropped.

Produces pneumatic pressure and vacuum to check calibration of gauges, switches, transmitters, and recorders. The contoured cushioned handles provide extra comfort while preventing the pump from sliding. The over-sized check valve provides smooth operation throughout the output range while the dual o-rings on all pistons ensure zero leakage. Patented Mash proof vent valve comes standard on all MVP-600s (No Needle Valve) and a non-oil based lubricant is used on all moving parts.

MODELS / EXTRAS

M-10.....**$999**
M-10KT.....**$1,099**
includes Pump, a black padded canvas case embroidered with orange thread, 3ft high pressure hose, fittings, 3 filters, test point, adaptor, and fluid bottle.*
M-10WIN.....**$2,189**
includes everything in the M-10KT plus Winchester Engineering Model 1 Auto Ranging Digital Gauge™ w/ N.I.S.T. certification and versatile hook.*
M-10WIN-FIT.....**$2,689**
includes everything in the M-10WIN plus FasTest universal quick connect kit and coupler for Swagelok tube fittings.*
M-10RK.....**$150**
Rebuild Kit for M-10.

*Note: Kits, hoses, and fittings can be customized upon request.

MVP-600.....**$699**
MVP-600KT.....**$797**
includes Pump, a black padded canvas case embroidered with orange thread, 2ft non-stretch hose, fittings, additional rubber bonded washers and (2) adaptors.
MVP-600WIN.....**$1,779**
includes everything in the MVP-600KT plus Winchester Engineering Model 1 Auto Ranging Digital Gauge™ w/ N.I.S.T. certification and versatile hook.*
MVP-600WIN-FIT.....**$2,279**
includes everything in the MVP-600WIN plus FasTest universal quick connect kit and coupler for Swagelok tube fittings.*
MVP-600RK.....**$125**
Rebuild Kit for MVP-600.

*Note: Kits, hoses, and fittings can be customized upon request.

M-80

Magnum Low Pro Volume Pressure Chamber

Range: Near absolute vacuum (30"Hg to 80 PSI)
Resolution - 0.0001 PSI
Bench Mountable
2 Year Quibble-Free Warranty
Weight: 3.5 lbs

Capable of extremely high resolution (0.0001 psi) as it spans the range of near absolute vacuum to low pressures (30" Hg to 80 psi). It's rugged outer housing and dual o-ring design ensures zero leakage. Not only is the M-80 bench mountable, but it's relative light weight (3.5 lbs) makes it perfect for field use as well. Optional power drive supplied to rotate the vernier at a quicker pace in-order to speed up your calibrations.

M-80.....**$1,350**
M-80KT.....**$1,497**
includes Pressure Chamber, ball valve, (2) 2ft non-stretch hoses w/ fittings, a portable handheld power drive, rechargeable lithium battery, and charger.
M-80WIN.....**$2,546**
includes everything in the M-80KT plus Winchester Engineering Model 1 Auto Ranging Digital Gauge™ (absolute vacuum to 3K PSI) w/ N.I.S.T. certification.
M-80TH.....**$3,447**
includes everything in the M-80KT plus a Thommen® differential pressure calibrator (0.1% accuracy full scale with a resolution of 0.001" H2O differential).

MP-P | MP-V

Pressure • Vacuum Calibration Pump

Range: 0 PSI to 100 PSI (7 Bar) | 28"Hg to 0 PSI
Compatible with all gauges and calibrators
Connections: 1/8" NPT/BSP
2 Year Quibble-Free Warranty
Weight: 1 lb

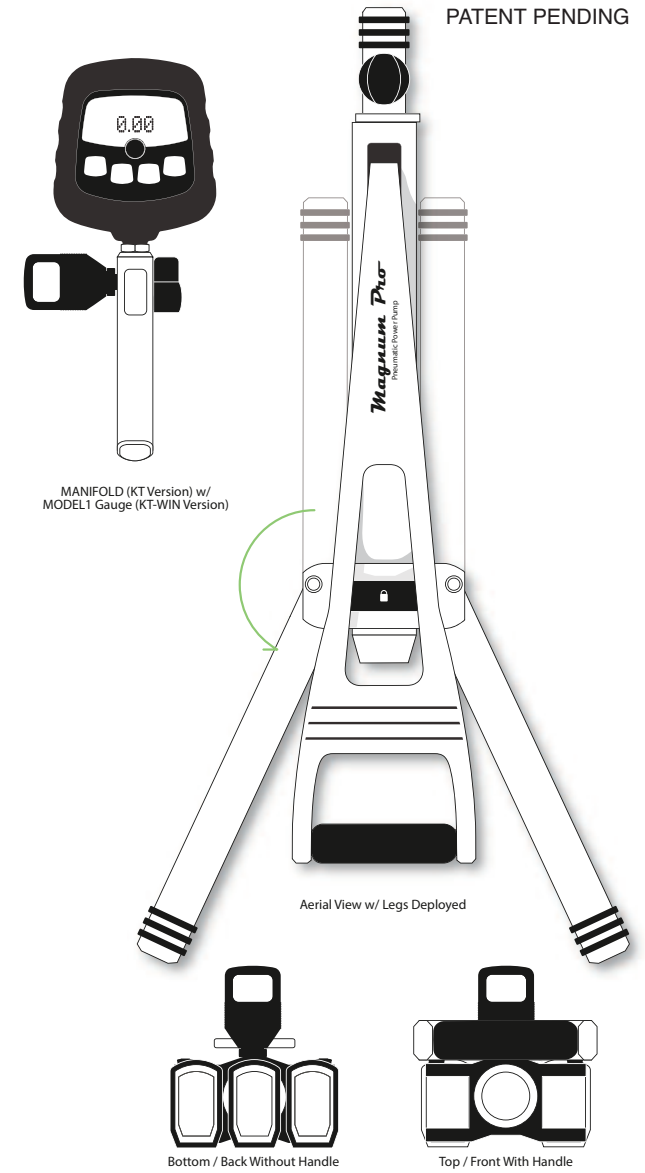
Features a Delrin® plastic handle that prevents body heat transfer from interfering with readings, as well as an oversized check valve for smooth operation. The dual o-rings on all pistons ensure zero leakage. MP-P and MP-V have been in service for over 10 years and can now be found in over one third of all power plants. Both models will out perform any manufactured pump in it's category.

MP-P | MP-V.....**$399**
MP-PKT | MP-VKT.....**$497**
includes Pump, a black padded canvas case embroidered with orange thread, 2ft non-stretch hose, fittings and Winchester Engineering M-2 stainless steel 2.5" analog gauge w/ protective rubber boot.*
MP-PKT-FIT | MP-VKT-FIT.....**$996**
includes everything in the MP-PKT | MP-VKT plus FasTest universal quick connect kit and coupler for Swagelok tube fittings.*
+HK-1.....**+$49**
adds a 2ft non-stretch hose kit w/ fittings for side port to any model.*
MP-PRK | MP-VRK.....**$98**
Rebuild Kit for MP-P or MP-V.

*Note: Kits, hoses, and fittings can be customized upon request.

PP-4

Magnum Pro
Pneumatic Power Pump



Fluids in a transmitter or delicate system have always been a concern. Magnum Pro introduces the only fully versatile high pressure pneumatic pump capable of generating pressure up to 4,000 psi without liquid or the use of nitrogen. Two support legs fold out to stabilize the pump so it can be operated by either foot or hand. No other pump offers our patented optional manifold system to allow a person to pump, control, & vent the pressure while standing. The vernier allows the pressure to be finely adjusted and sealed off to dial into the desired pressure.

- 0 to 4,000 PSI
- Light weight
- Easy to set up
- No heavy nitrogen bottles necessary
- No contamination of process system with oils and water
- Won't freeze in low temp from water intrusion
- Can operate with a remote control (manifold)
- Can be used on a bench or taken out to the field
- 2 Year "Quibble-Free" warranty

Why the Magnum Pro Power Pump?

- Exremely light weight and compact. 40% lighter than its competition.
- Folding arms and carrying handle.
- Generating pressure with foot pedal provides comfortable upright operation with *much* less effort.

PP-4.....**$2,999**
PP-4KT.....**$3,899**
includes Pump, Manifold, (2) 5ft high pressure hose, fittings.
PP-4WIN.....**$4,875**
includes everything in the PP-4KT plus Winchester Engineering Model 1 Auto Ranging Digital Gauge.
PP-4WIN2.....**$4,889**
includes everything in the PP-4KT plus Winchester Engineering Model 2 Wide Range Digital Gauge.

F-15 - F-22

HK

Individual Swivel Style & FastCal Fittings

All fittings are rated to 5,000 psi (some 10,000 psi)
Fast Connection: Twist hand tight, no tools, no tape
Eliminate thread damage to instruments
Minimize contamination to process media
All fittings are made of stainless steel
Custom sizes by request

In calibration, there has always been a need to make a fast, non-destructive and reliable connection. Leaks, re-taping, and re-tightening become time consuming. The FasTest fitting was developed for volume production of refrigeration components, where only seconds are allowed for connection, pressurization, and testing.

Any connection is made without tape and without tools. Stripped transmitters and fittings become a thing of the past. These fittings are probably the most cost effective product in the instrument or calibration shop.

F-15.....**$89**
A 1/4" IEC thread specifically for use with the recessed hole in transmitters.
F-16.....**$74**
Attaches to transmitters after nut and ferrule is removed.
F-17.....**$77**
For 1/4" NPT internal (female) threads.
F-18.....**$55**
For 1/8" NPT external (male) threads.
F-19.....**$55**
For 1/4" NPT external (male) threads.
F-20.....**$77**
For 1/8" NPT internal (female) threads.
F-22 (Kit).....**$499**
FasTest universal quick connect kit includes all of the above fittings inside a hard yellow carrying case.

Regular & High Pressure Calibration Hoses

10,000 psi working pressure
32,000 psi burst pressure
Pneumatic & hydraulic applications
Small in diameter (3/16" OD)
High Pressure Hose made of Kevlar & Steel
Any length & any fitting configuration

Magnum Pro calibration hoses are flexible, leak proof and stabilize quickly without stretching. The provided swivel fittings prevent kinking and will work with any calibrator, gauge or pump part. You can fully customize your length or fittings to make the Magnum Pro hoses positively the best connection you could have! Swagelok ends available.

The options for fittings are: 1/8 NPT male, 1/8 NPT female, 1/4 NPT male, 1/4 NPT female, 1/4 mini-mess female, swagelok tube male.

HK-1.....**$49**
2' Standard Hose for MP-P & MP-V.
1/8" NPT male x 1/8" NPT female.
HK-600.....**$78**
2' Standard Hose for MVP-600 & M-80.
1/8" NPT male x 1/4" NPT female.
HK-HP.....**$189**
3' High Pressure Hose.*
The HP Hoses are available in the following **FITTINGS**:

- mini mess female
- 1/8" NPT male
- 1/8" NPT female
- 1/4" NPT male
- 1/4" NPT female

TP-4.....**$38**
Test point 1/4" - connects to mini mess fitting.

*Note: Please add $20 per extra foot.

MODEL 1

Auto Ranging Digital Gauge™

FEATURES

Accuracy: 0.1% of reading from absolute zero to 3,000 psi
Units: psi, Bar, psia, inches of H_2O, inHg, mmHg, Absolute
Temperature Compensation: 0-50°C (32-120°F)
Connections: 1/4" NPT Male
2 Year Quibble-Free Warranty
Weight: 2 lbs

DESCRIPTION

The Model 1 will replace the need to use many gauges of different ranges to achieve and maintain high accuracy. **Model 1 also functions as an absolute pressure gauge**. The auto-ranging technology uses multiple piezoresistive sensors to read the entire range using just one gauge where it would otherwise require up to seven of our closest competitors digital gauges. Certification costs are lowered by reducing the number of gauges. It's rugged, shockproof design comes equipped with a protective rubber housing. Large, easy-to-read, one-line display with vibrant backlight is perfect for any light condition.

MODELS / EXTRAS

MODEL 1.....**$999**
MODEL 1KT.....**$1,197**
includes Gauge, NIST certification, case, versatile hook.
MVP-600WIN.....**$1,779**
includes Gauge, versatile hook, MVP-600 Pump, a black padded canvas case embroidered with orange thread, 2ft non-stretch hose, fittings, additional rubber bonded washers and (2) adaptors.
M-10WIN.....**$2,189**
includes Gauge, versatile hook, M-10 Pump, a black padded canvas case embroidered with orange thread, 3ft high pressure hose, fittings, 3 filters, test point, and fluid bottle.
M-80WIN.....**$2,546**
includes Gauge, M-80 Pressure chamber, (2) hoses, fittings, a portable handheld power drive, rechargeable lithium battery and charger.

MODEL 2

Wide Range Digital Gauge

FEATURES

Accuracy: 0.05% of full scale from 0 to 10,000 psi
Units: psi, Bar
Temperature Compensation: -10-50°C (14-122°F)
Connections: 1/4" NPT Male
2 Year Quibble-Free Warranty
Weight: 2 lbs

DESCRIPTION

Like the Model 1, the Model 2 will replace the need to use many gauges of different ranges to achieve and maintain high accuracy (0.05% f.s.) throughout a wide span (2,500-10,000 psi). The need for multiple gauges is eliminated. The Model 2 is explosion proof and fully temperature compensated. It has a large, vibrant one line display. It is housed in a high impact, sturdy case with an optional rubber boot for additional protection. Model 2 runs on three AA batteries. This gauge is destined to become the standard of the industry!

MODELS / EXTRAS

MODEL 2.....**$999**
MODEL 2KT.....**$1,124**
includes Gauge, NIST certification, rubber boot, case.
M-10WIN2.....**$2,149**
includes Gauge, M-10 Pump, a black padded canvas case embroidered with orange thread, 3ft high pressure hose, fittings, 3 filters, test point, and fluid bottle.
PP-4WIN2.....**$4,889**
includes everything in the PP-4KT plus Winchester Engineering Model 2 Wide Range Digital Gauge.

+$49 Rubber Boot

M SERIES

4”
Analog Gauge

Accuracy: 0.5% Accuracy full Scale (ANSI Grade 2A)
All Stainless Steel with Rubber Boot
Liquid Fillable
Connections: 1/4” NPT Male
2 Year Quibble-Free Warranty
Weight: 1 lb

The M-4 analog gauge comes in a variety of display sizes and ranges to suit your exact needs. The protective rubber boot will ensure it the best protection from the rugged use in heavy duty industrial environments.

Its face is made of laminated safety glass and the pointer is adjustable. It is hermetically sealed and weather proof. All wet parts are 316SS.

M SERIES

2.5”
Analog Gauge

Accuracy: 0.5% Accuracy full Scale (ANSI Grade 2A)
All Stainless Steel with Rubber Boot
Liquid Fillable
Connections: 1/4” NPT Male
2 Year Quibble-Free Warranty
Weight: Under 1 lb

The M-2 analog gauge comes in a variety of display sizes and ranges to suit your exact needs. The protective rubber boot will ensure it the best protection from the rugged use in heavy duty industrial environments.

Its face is made of laminated safety glass and the pointer is adjustable. It is hermetically sealed and weather proof. All wet parts are 316SS.

M-2 Analog Gauge.....**$125**
2.5” display.
M-4 Analog Gauge.....**$145**
4” display with protective boot.
M-6 Analog Gauge.....**$195**
6” display with protective boot.

+$50 NIST Calibration Certificate
+$35 Glycerin Filled

All models are available in the following **RANGES**:

30” -0 hg vac	30” -0-200	0-100 psi	0-800 psi	0-10,000 psi
30” -0-15	30” -0-300	0-160 psi	0-1,000 psi	0-15,000 psi
30” -0-30	30” -0-600	0-200 psi	0-1,500 psi	0-20,000 psi
30” -0-60	0-15 psi	0-300 psi	0-2,000 psi	
30” -0-100	0-30 psi	0-400 psi	0-3,000 psi	
30” -0-150	0-60 psi	0-600 psi	0-5,000 psi	

MFC 5150

HART Communicator

M200

Smart Manometer

FEATURES

Reads manufacturers DDs in their native format
Enhanced 4.3" diagonal anti-glare touchscreen
Ergonomic, handheld design
Operating temp: 14 to 122°F (-10 to 50°C)
480 X 272 pixels display
Full QWERTY keyboard

Handheld, high-precision, digital manometer with an accuracy of up to ±0.025% of full scale
Document up to 240 readings (auto or manual)

Engineering Units: Inches of H2O, PSI, mm of Hg, inches of Hg, mBars, Bars, kPa, kg/cm2, cm of H2O

DESCRIPTION

The Meriam MFC 5150 HART Communicator utilizes a Windows based system for faster processing and greater storage capacity. Plus, no subscriptions, and with all options standard at no extra cost. The device is supplied with a fast 1-GHz processor, 256 MB of RAM and 512 MB of flash memory. It is capable of supporting up to an 8-GB SD card, which gives it the ability to store every existing DD file. This enables communication to take place with any registered or unregistered HART device, ensuring that the HART transmitter will connect to the 5150 regardless of brand or model.

The Meriam M200 smart manometer brings high precision and value to handheld, digital manometer users. The Meriam M200 features NIST traceable accuracy of ±0.025% of FS, independent of temperature effect, at the lowest prices available. Pressure ranges from 10" H2O FS to 3,000 PSIG FS are available.

The Meriam M200 smart manometer pressure sensors are available to measure gauge, differential or absolute pressure. The display can read out in any of eleven pressure units or can be linearly scaled for special user units.

MODELS / EXTRAS

Meriam MFC 5150.....**$5,200**
includes HART Communicator, Docking Station and Power Adapter, universal plug kit, USB Cable communication from docking station to PC, Battery pack, rechargeable 9600 mAH Li-Ion, Soft Carrying Case, Hand Strap, and SD Card.

Atex certified Instrinsic Safety.....**$300**

Meriam M200.....**$1,150**
The M200 is available in the following **RANGES**:

Differential: From 0 up to and including 2,000" H2O*
Gauge: From 0 up to and including 3,000 PSI*
Compound: From -15 up to and including +3,000 PSI*
Absolute: From 0 up to and including 1000 PSIA*

The M200 Series is available in the following **ACCURACY**:

Standard ± .05% Enhanced ± .025%**

Intrinsically Safe Certification.....**$232**

*Note: Prices vary based on range selected, see website for more info.
**Note: Please add $185 for this accuracy.

M200-DI
Wet/Wet Smart Manometer

Accuracy: up to ±0.025% of Full Scale
7 Differential Pressure Ranges Avalable
Eleven user-selectable engineering units
Documents up to 240 readings for future recall
Field recalibration to zero, span and linearity
User-selectable 1-Point or 5-Point calibration procedure

The M200-DI is a handheld, intrinsically smart-manometer for liquids with high accuracy for wet/wet differential pressure applications. Potentially corrosive or wet gasses can also be handled. All ranges are rated for 1000 PSI common mode pressure.

The damping feature minimizes pulsation effects. The 'Hold' function freezes the display for convenient reading. Leak test allows users to view Min/Max pressure values and calculates leak rate per minute in pressure units. This is a valuable tool for troubleshooting or pressure testing pneumatic systems.

Meriam M200-DI.....$1,551
Includes protective red boot, batteries. The M200-DI is available in the following differential **RANGES**:

0-5 PSID (0-138" H2O)
0-15 PSID (0-415" H2O)
0-30 PSID (0-830" H2O)
0-100 PSID (0-2768" H2O)
0-300 PSID
0-500 PSID
0-1 PSID (0-28" H2O)*

The M200 Series is available in the following **ACCURACY**:

Standard ± .05% Enhanced ± .025%**

Intrinsically Safe Certification.....$232

*Note: Prices vary based on range selected, see website for more info
**Note: Please add $185 for this accuracy.

M201
Enhanced Rotary Gas Meter Tester

Recalibration for zero, span and linearity
1-point or 5-point calibration procedure
Enhanced or Legacy software mode
Pressure limits are twice range on differential units when pressurized on high side only and 150 PSI static when applied to both sides of sensor simultaneously

The M201 makes drop testing rotary (natural) gas meters even easier. Improved hardware options protect the M201 from one sided overpressure. 'Measure Mode' lets it be used as a conventional differential pressure measurement device. Users will appreciate the live pressure display as they check the handheld's zero or observe DP across rotary gas meters. The M201 uses an internal stop watch to measure the test length during a drop test. It reports both the test time and the average differential pressure measured during the test. Toggle the Min/Max key to see the minimum and maximum DP measured during the test.

Meriam M201 - Push-to-read Valve, brass (2-port pressure manifold).....$1,668
Meriam M201 - 1/4 turn Valve, brass, copper (2-port pressure manifold).....$1,719
Meriam M201 - Integral push-to-read-valve, 316SS, viton (3-port pressure manifold).....$2,016
all models include protective red boot, batteries.

The M201 is available in the following differential **RANGES**:

Differential - 0-200 inH20
Differential - 0-28 inH20 (+$62)

Intrinsically Safe Certification.....$232

CONDEC

Accurate Thermal Systems

ThermCal400
Dry Block Temperature Calibrator

SOURCE 3000
Pressure Source

FEATURES

Range: 25°C - 400°C (20°C ambient)
Stability: ±0.02°C (25°C - 200°C) | ±0.04°C (200°C - 400°C)
Accuracy: ±0.25°C (25°C - 200°C) | ±0.4°C (200°C - 400°C)
Heat up time 25 to 400°C: 13 Minutes
Cooling time 400 to 100°C: 20 Minutes
Weight: 11 lbs

Self-contained nitrogen cylinder
"Overpressure Protection" regulator
Works with all pressure calibrator models
15.2 cubic foot nitrogen at 3000 psi

DESCRIPTION

The ThermCal400 is a small, portable and light weight calibrator that is built rugged for field work with specifications good enough to be a laboratory standard. Perform calibration checks on liquid in glass thermometers, dial thermometers, hand held digital indicators, probe assemblies, systems and virtually dozens of other temperature monitoring and recording devices. Checking the performance and accuracy of a temperature sensor is best performed by placing it in precise environment at its true operating temperature.

The Condec Source 3000 is a pneumatic pressure source that offers a clean and dry pressure up to 3,000 psi. It's pressure generator is equipped with a large-capacity cylinder that ensures you won't run out of nitrogen in the middle of a job. It eliminates the inconvenience and physical stress of hand pumps. It has two ports for connecting to a measuring device and virtually any electronic calibrator. The Source 3000 is a unique device that incorporates a pressure vernier to allow you to dial in exact pressure readings, which eliminates the risk of costly damage from overshoot.

MODELS / EXTRAS

ThermCal400.....$2,110
includes ThermCal400, multiwell aluminum insert, insert extractor, power cable, carrying strap, instruction manual, and traceable calibration certificate.

Insert Blank.....$175
Insert 5 x 1/4" holes.....$208
Insert 2 x 1/4" & 2 x 3/8" holes.....$208
Insert 2 x 1/4" & 2 x 1/2" holes.....$208
Insert 1 x 1/4" hole.....$208
Insert 1 x 9/16" & 1 x 1/4" holes.....$208
Insert 1 x 5/8" & 1 x 1/4" holes.....$208
Insert 1 x 11/16" & 1 x 1/4" holes.....$208
Insert 1 x 3/4" & 1 x 1/4" holes.....$208
Soft sided carrying case with insert pockets.....$105

Source 3000.....$4,195

Swagelok QC4 Style Quick-Disconnect $50
Swagelok QC4 Style Quick-Disconnect Female Test Ports and QC4 Quick-Connect Male Fill Port (Buna-N Seals).
Ralston quick-test/check-valve.....$50
Ralston quick-test/check-valve Male Test Ports and Standard 7/16 -20 AN Male Fill Port (Buna-N Seals).
Tool Hose Canvas Carrier.....$45
2 High Pressure Hoses w/ Fittings.....$499
Pressure Trap.....$625
Stainless steel pressure trap to contain backflow.

HM30

Meteo Station

Barometric pressure, Dew point determination
Altitude Measurement
Second temperature with insertion sensor
Works with Leica precision measurement equipment
Peak Value Storage, min/max

The HM30 has numerous applications including metrology, heating, ventilation, air conditioning, geology, geodesy, measurement, technique, aviation, and mountaineering. Several meteo parameters can also be observed, measured and evaluated along with simultaneous display of barometric pressure, humidity, temperature 1 and temperature 2. It also comes equipped with data-logging including real time clock, data transfer to PC, PC remote control facility, data printout possible without PC and windows supported software.

HM30.....**$1,989**

Why the Meteo Station?

- So sensitive you can measure the height of a table.
- Extremely Reliable.
- Complete instrument measures barometric pressure and humidity pressure.

HM35

Differential Calibrator

Ranges from as low as 0-10" H2O
Data Log Memory for 10,000 measurements
MIN/MAX and average values
Accuracy to better than .025% (±1/2 LSD)
Lowest full-scale differential pressure calibrator made
Withstands 145 psi static pressure

The HM35 Gauge & Differential Digital Manometer provide users with gauge, vacuum and differential pressure measurements with accuracy to 0.05%FS. Absolute and Barometric models are rated at 0.1% FS. Accuracy includes stability for one year and is valid over the operating temperature range of 0°C to 50°C. A large easy to read display and light weight ergonomic case make the HM35 convenient to use. The HM35 is ideal for very low pressure differential measurements.

HM35.....**$1,995**
HM35EX (explode proof).....**$2,295**
HM35AB (absolute).....**$2,295**

The HM35 is available in the following **RANGES**:

0-10" H2O	0-14.5 PSI	0-245 PSI
0-28" H2O	0-15.9 PSI	0-500 PSI
0-80" H2O	0-29 PSI	0-1000 PSI
0-120" H2O	0-100 PSI	0-1300 PSI
0-200" H2O	0-145 PSI	

PIE 850 PIE 830

10-50 mA Multifunction Process Calibrator

High Accuracy Multifunction Diagnostic Calibrator w/ Dual Display

DESCRIPTION

The PIE Model 850 is more than a multifunction calibrator. It is also a loop detective that is able to diagnose common problems that other test equipment just can not find. Or use the LoopScope to see at a glance all the parameters - milliamps, voltage and resistance - in the loop.

The PIECAL 830 is more than a multifunction calibrator that can handle Milliamp, Voltage, Frequency, pH Ohms, Thermocouples, RTDs, Pressure, Loop Diagnostics, and Transmitter Supply. It is also a loop detective that is able to diagnose common problems that other test equipment just cannot find.

FEATURES

Calibrate with Confidence
Accurate to ±0.02% of Reading + 0.01% Full Scale.

Lighten up your toolbox
Pocket sized calibrator replaces toolbox of single function devices, Milliamp, Voltage, Frequency, pH, Ohms, Thermocouples, RTDs, Pressure, Loop Diagnostics, Transmitter Supply.

Guaranteed Compatibility with process inputs
Compatible with the instruments you use including all brands of smart transmitters and PLCs with 14 T/C and 9 RTD types to 0.1°C and 0.1°F

Detect hidden loop problems
Quickly diagnose troublesome ground faults & current leakage with patented Loop Diagnostic technology. These problems are undetectable with other instruments!.

Check all loop parameters at once with the LoopScope
Simultaneously displays current, voltage and resistance to let you know the condition of a live loop. Finds problems with power supplies & loops with too many loads. Patented by PIE!

Troubleshoot wiring problems without a multimeter
Built in continuity checker with beeper quickly finds broken wires or shorts in instrumentation wiring. Also handy for checking operation of relays and controller outputs.

Detect hidden loop problems
Quickly diagnose troublesome ground faults & current leakage with patented Loop Diagnostic technology. These problems are undetectable with other instruments!

Check all loop parameters at once with the LoopScope
Simultaneously displays current, voltage, and resistance to let you know the condition of a live loop. Finds problems with power supplies & loops with too many loads. Patented by PIE Instruments.

Automatically detect 2, 3 or 4 wire RTDs
Trouble shoot sensor connections and find broken wires with patented technology. LCD indicates which of the four wires are connected to an RTD sensor.

Swap out faulty transmitters to diagnose control issues
Easily setup the 830 as a universal isolated transmitter for temperature, frequency, millivolt or pressure. If the loop is back under control you know the transmitter was faulty. Turn on the LoopScope to simultaneously see the loop current, power supply voltage and loop loads for troubleshooting.

Troubleshoot wiring problems without a multimeter
Built in continuity checker with beeper quickly finds broken wires or shorts in instrumentation wiring. Also handy for checking operation of relays and controller outputs.

MODELS / EXTRAS

PIE 850.....$5,495
includes rubber boot, custom carrying case, test leads, RTD wire kit, batteries, calibration certificate.

T/C - J,T,E,K mini plug w/ stranded wire, lead kit.....$95
T/C - B,R/S,N mini plug w/ stranded wire, lead kit.....$95

PIE 830.....$2,895
includes rubber boot, custom carrying case, test leads, RTD wire kit, batteries, calibration certificate.

NiMh Charger & 4 "AA" batteries 120v 60hz.....$80
T/C - J,T,E,K mini plug w/ stranded wire, lead kit.....$95
T/C - B,R/S,N mini plug w/ stranded wire, lead kit.....$95

PIE 820
Multifunction Process Calibrator

The PIECAL 820 process calibrator packs the power of six single function calibrators into one surprisingly small package. It combines advanced features, ease of use, accuracy, signal compatibility and compact size. Essentially functions as a Fluke™ 743 without pressure and documentation functions.

Lighten up your toolbox
Pocket sized calibrator replaces toolbox of single function devices, Milliamp • Voltage • Frequency, Thermocouples • RTDs • Check Continuity.

Technician friendly operation
Intuitive EZ-DIAL Double Click Menu makes it easier to setup than other multifunction calibrators. Uses the same menus as the single function PIECAL Evolution Calibrators.

Use it as a milliamp and voltage calibrator
Source 0 to 24.00 mA, 0 to 10.25v dc and -10.00 to 110.00 mV, Read to 24.00 mA, ±60.00v dc and -10.00 to 110.00 mV, Simulate 2-Wire Transmitters, Power up transmitters & loops with the built-in 24v power supply, Simplify HART hookups with built-in 250 Ohm resistor.

Calibrate directly in temperature (°C & °F)
The PIECAL 820 works with the instruments you use. Types J, K, T, E, R, S, B, N, G, C, D, L (J DIN), U (T DIN) and P (Platinel II). Pt 100 Ohm (3850, 2902, 3916, 3926) & 1000 Ohm (3850) Copper 10 & 50 Ohm, Nickel 100 and 120 Ohm.

Checkout flow and vibration systems
Source & read frequency to 2000 CPM (Counts-Per-Minute), 999.00 Hz, 9999.9 Hz, 9.9999 kHz & to 20.000 kHz.

Troubleshoot loop & wiring problems
'Beep' out connections with the built-in continuity checker.

PIE 820.....$1,895
includes rubber boot, custom carrying case, test leads, RTD wire kit, batteries, calibration certificate.

T/C - J,T,E,K mini plug w/ stranded wire, lead kit.....$95
T/C - B,R/S,N mini plug w/ stranded wire, lead kit.....$95

PIE 334+
Milliamp Loop Diagnostic Calibrator

The PIECAL 334+ powers up the 2-Wire transmitter or loop and indicates the total current and the uncontrolled current. This provides information useful to troubleshoot loop errors.

Calibrate Milliamp Instruments
Source 0.00 to 24.00 mA & -25.0 to 125.0% of 4-20 mA, Read 0.00 to 52.00 mA, Read -99.99 to 99.99 V, Simulate 2-Wire Transmitter, Power & Read Transmitters, Menu Selectable 250 Ohm resistor for HART compatibility.

Calibrate with Accuracy
Accurate to ±(0.02% of Reading + 0.002 mA).

Easy-to-Read Backlit Display

Locate Loop Current Leakages
Automatic indication of Loop Current and Leakage Current. Measure ground current leakage from faulty wiring, flooded conduit and corrosion bridges. Leakage typically appears as a Zero Shift and helps you decide if the transmitter needs calibration or if there is a problem in the loop wiring.

Faster Calibrations
Three output EZ-CHECK switch, 2 speed EZ-DIAL, Stepping & Ramping
Includes Rubber Boot & Test Leads.

PIE 334+.....$845
includes rubber boot, custom carrying case, test leads, batteries, calibration certificate.

AC Adaptor 100-120v,60Hz.....$60
NiMh Charger & 4 "AA" batteries 120v 60hz.....$80

PIE 434 PIE 311

Automated Diagnostic 4-20 mA Calibrator

Automated Universal RTD Calibrator

DESCRIPTION

The PIECAL 434 allows you to check, calibrate and measure all of your current signal instruments in a 4-20 mA DC loop. It can be used at any access point in your loop. You can calibrate recorders, digital indicators, stroke valves or any instruments that get their input from a 4-20 mA loop. Quickly diagnose ground fault and current leakage.

The PIECAL 311 gives you an updated design while maintaining the familiar, time proven ease of use of similar calibrators. Get an RTD calibrator with more digits (0.01° resolution), automatic stepping, backlit display, a rubber boot and rugged switches. It is also compatible with more instruments in the field.

FEATURES

Calibrate Milliamp Instruments
Source 0.000 to 24.000 mA & -25.00 to 125.00% of 4-20 mA. Read 0.000 to 24.000 mA & -25.00 to 125.00% of 4-20 mA. Read -99.99 to 99.99 V. Simulate 2-Wire Transmitter, Power & Read Transmitters. Menu Selectable 250 Ohm resistor for HART compatibility.

Calibrate with Lab Accuracy
Accurate to ±(0.01% of Reading + 0.002 mA). PIECAL 434 is more accurate than similar calibrators - within ±0.004 mA at 20 mA output!

Locate Loop Current Leakages (Ground Faults)
Automatic indication of Loop Current and Leakage Current. Measure ground current leakage from faulty wiring, flooded conduit and corrosion bridges. Leakage typically appears as a Zero Shift and helps you decide if the transmitter needs calibration or if there is a problem in the loop wiring.

Faster Calibrations
Three output EZ-CHECK switch, 2 speed EZ-DIAL, Stepping & Ramping.

Easy-to-Read Backlit Display
Easy viewing in dark locations.

Calibrate with Ease
Resolution to 0.1 °F & °C; Accurate to 0.2°.

Source and Read Multiple RTD Curves plus Ω
Platinum 100 Ω: 1.3850, 1.3902, 1.3926, Platinum 1000 Ω: 1.3850, 1.3750, Copper 10 & 50 Ω; Nickel 110 & 120 Ω; 0.00 to 4001.0 Ω, Custom ranges available: consult factory.

Automatically Detect 2, 3, & 4 Wire Connections
Troubleshoot sensor connections & find broken wires with patented technology.

Guaranteed Compatible with all Instrumentation
Works with Rosemount & Honeywell Smart Transmitters, PLCs, DCSs, Multi-channel Recorders and other pulsed excitation devices.

Faster Calibration
Instantly select three outputs with EZ-CHECK switch. Easily find trip points with two speed EZ-DIAL knob & Automatic Stepping.

Additional Info
Double click to select RTD Type & °F & °C. Secondary display of Ω, Easy-to-Read Display w/ backlight. Simple "No Tool" Battery Changes, Four inexpensive "AA" batteries, Use in the Plant, Field or Shop.

MODELS / EXTRAS

PIE 434.....**$995**
includes rubber boot, custom carrying case, batteries, calibration certificate, and test leads.

AC Adaptor 100-120v,60Hz.....**$60**
NiMh Charger & 4 "AA" batteries 120v 60hz.....**$80**

PIE 311.....**$1,395**
includes rubber boot, custom carrying case, batteries, calibration certificate, and RTD Wire Kit.

PIE 322-1

Automated Thermocouple Calibrator - J, K, T & E

The PIECAL 322-1 gives you advantages of an updated design while maintaining the familiar, time proven ease of use of similar calibrators. Choose the PIECAL 322 and get a thermocouple calibrator with a backlit display, a rubber boot and rugged switches with the same high accuracy.

Source and Read Four T/C Types plus mV
J, K, T & E: - 13.000 to 80.000 mV.

Calibrate with Confidence
Resolution to 0.1 °F & °C; Accurate to 0.2°.

Faster Calibrations
Instantly select three outputs with EZ-CHECK switch. Easily find trip points with two speed EZ-DIAL knob & Automatic Stepping.

Easily Change T/C Types & Scale
Double click to select T/C type & °F & °C.

Easy-to-Read Display
Turn on the backlight to read in dark areas of the plant.

Use in the Plant, Field or Shop
Includes Rubber Boot and mV Test Leads. Low profile switches resist accidental damage.

Simple "No Tool" Battery Changes
Four inexpensive "AA" batteries.

Optional Accessories
Wire & Mini T/C Plug: J, T, E, K (020-0202).

PIE 322-1.....$995
includes rubber boot, custom carrying case, batteries, calibration certificate.

T/C - J,T,E,K mini plug w/ stranded wire, lead kit.....$95

PIE 422

Automated Thermocouple Calibrator - 14 Types

The PIECAL 422 gives you advantages of an updated design while maintaining the familiar, time proven ease of use of similar calibrators. equipped with a backlit display, automatic stepping, simultaneous display of temperature and millivolt reading, a rubber boot and rugged switches with the same high accuracy.

Source and Read Fourteen T/C Types plus mV
J, K, T, E, R, S, B, N, G, C, D, L (J DIN), U (T DIN) & P (Platinel): -13.000 to 80.000 mV.

Calibrate with Confidence
Resolution to 0.1 °F & °C; Accurate to 0.2°.

Faster Calibrations
Instantly select three outputs with EZ-CHECK switch. Easily find trip points with two speed EZ-DIAL knob & Automatic Stepping.

Easily Change T/C Types & Scale
Double click to select T/C type & °F & °C.

Use in the Plant, Field or Shop
Includes Rubber Boot and mV Test Leads. Low profile switches resist accidental damage. Four Inexpensive "AA" batteries to operate. Turn on the backlight to read in dark areas of the plant.

Verify Cold Junction Temperature & Output
Secondary Display of compensated millivolt setting and cold junction temperature.

Optional Accessories
Wire & Mini T/C Plug: J, T, E, K (020-0202); B, R/S, K (020-0203).

PIE 422.....$1,295
includes rubber boot, custom carrying case, batteries, calibration certificate.

T/C - J,T,E,K mini plug w/ stranded wire, lead kit.....$95
T/C - B,R/S,N mini plug w/ stranded wire, lead kit.....$95
NiMh Charger & 4 "AA" batteries 120v 60hz.....$80

PIE 541

PIE 511B

Frequency Calibrator with Totalizer

Ten Type RTD Plus Ω Simulator

DESCRIPTION

The PIECAL 541 is the best tool for calibration, test, and any frequency devices in the shop, plant and/or field. Save hours of time on problems when compared to other calibration methods. This calibrator will automatically stop when the selected number of pulses has been sent to the totalizer, eliminating the need of a stop watch.

The PIECAL 511B simulates RTD resistances into transmitters, recorders, controllers, alarms, data acquisition, and computer systems and has better accuracy and functions than most other RTD calibrators. It is a superior replacement for decade boxes considering the weight difference.

FEATURES

Frequency Read & Source Functions
True ±0.005% of range accuracy. Source and Read. Six Ranges 1 per hour to 20.000Khz. Calibrate Totalizer input and outputs from 1 to 99999. Count Pulses 1 to 99999. LED indicator for gate time.

Read / Source Function
Read a wide range of Frequencies and Waveforms. Read 50mV to 120V peak. Read signals from Flowmeter pickups, Velocity and Motion Detectors and Totalizers. Sine and Square waves, Zero Based and Zero Crossing. Frequency from 1CPH to 20 KHz. Adjustable amplitude from 100mV to 12Volts peak-to-peak. Simulates Vibration Pickups, Variable Speed Drives and more.

Calibrate Totalizers & Gate Trigger Indicator
Output a number of pulses from 1 to 100 minutes. The LED flashes in sync with the output frequency allowing easy adjustment of the attenuation for proper gate triggering.

EZ-Dial™ Knob & EZ-Check™ Switch
Change the speed of dialing your test point by just pushing down on the knob. Stop watch style push button for accurate totalizer measurements and for high and low readings

Uses a standard 9V Alkaline Battery
Superior battery life of 24 hours under typical continuous usage. Easy access to battery compartment.

Simulate one or ten RTD types
Check & calibrate all your RTD instruments. Includes four detachable leads with spade lugs for easy connection to your RTD instruments. Choose the PIECAL 511B if you have multiple types of RTDs (up to 10) with an accuracy of ±(0.015% of Setting in Ohms + 0.05 Ohms)

Take it into the shop, plant or field
Carry it without worry - protect it with an optional rubber boot and rugged, low profile switch. Easy to operate even in the dark areas of the plant with the backlit display.

Calibrate directly in temperature (°C & °F)
Stop carrying around a decade box and RTD resistance tables. The PIECAL 511B simulates the RTDs you use including Platinum 100 (alpha = 3850, 3902, 3926) & 1000 (alpha = 3850, 3750) Ohm, Copper 10 & 50 Ohm, Nickel 100 and 120 Ohm. Easily set any value quickly to within 0.1° with the adjustable digital potentiometer "DIAL" plus store any three temperatures for instant recall with the EZ-CHECKTM switch. Or use like a decade box from 0.00 to 410.00 and from 410.0 to 4001.0 Ohms.

Compatible with ALL process instruments
No competitor's calibrator is compatible with as many process |instruments! Connect directly to the RTD inputs of smart transmitters, PLCs, DCS and multichannel recorders and verify their outputs or displays. Works with older instruments and newer multichannel instruments that switch the excitation current between input channels.

MODELS / EXTRAS

PIE 541.....**$1,345**
includes carrying case, batteries, calibration certificate, and attached test leads.

NiMh Charger & 4 "AA" batteries 120v 60hz.....**$80**

PIE 511B.....**$635**
includes batteries, calibration certificate, and attached test leads.

PIE 510B.....**$565**
Single RTD Simulator Model.

LOOPY 5000

Portable 24V Loop Power Supply

No need to run wires
Can Power Any 4-20mA Loop
Up to a month of daily use
Battery Operated
2 Year Quibble-Free Warranty

The Loopy 5000 provides field technicians with a portable, economic, and durable 24VDC power source for powering field transmitters. This is especially useful during plant startup, shutdown, and overhaul, when the loops are not usually energized, but field instruments must still be installed, tested, and calibrated.

Efficient switching regulator allows LPS to extract virtually 100% of available battery power. Accidental short circuits are protected by a Positive Temperature Coefficient thermistor. A must have for any field technician's tool bag.

LOOPY 5000.....$199
Powered by (1) 9 Volt Battery. Offers superior portability from the palm of your hand to your shirt pocket.

* $50 OFF w/ purchase of any PIE Calibrator.

LOOPY 6000

Portable 24V Loop Power Supply

No need to run wires
Can Power Any 4-20mA Loop
Up to a month of daily use
Battery Operated
2 Year Quibble-Free Warranty

The Loopy 6000 provides field technicians with a portable, economic, and durable 24VDC power source for powering field transmitters. This is especially useful during plant startup, shutdown, and overhaul, when the loops are not usually energized, but field instruments must still be installed, tested, and calibrated.

Efficient switching regulator allows LPS to extract virtually 100% of available battery power. Accidental short circuits are protected by a Positive Temperature Coefficient thermistor. A must have for any field technician's tool bag.

LOOPY 6000.....$199
Powered by (4) AA Batteries. Offers superior portability from the palm of your hand to your shirt pocket.

* $50 OFF w/ purchase of any PIE Calibrator.

Why the Loopy?

- Doesn't tie up a second loop calibrator.
- Great for isolated loops.
- Light / Easy to carry.
- Compare to Transcat Model #21050E.

PD765 X2

Trident X2 Process & Temperature Meter

DESCRIPTION

Input: Process: 0-20 mA, 4-20 mA; ±10 VDC (0-5, 1-5, 0-10 V)
Temperature: Thermocouple J, K, T, E; RTD 100 Ω Pt
Display: 4-digit, 1.20" (30.5 mm)
Case: 1/8DIN, NEMA 4X/IP65
Power: 85-265 VAC or 12-36 VDC option
Operating Temperature: 0 to 65°C

FEATURES

- 1° or 0.1° resolution with RTD
- Sunlight readable display
- Maximum/minimumdisplay
- Linear or square root with low-flow cutoff
- Transmitter power option
- Modbus® RTU or proprietary ASCII protocol
- Shallow depth case 3.6" behind panel

OPTIONS
- 2 relays and 4-20 mA analog output options
- 24 VDC transmitter power supply
- Dual 24 VDC transmitter power supplies
- Serialcommunications

MODELS / EXTRAS

PD765 X2..... Starting at $319

Call for Options or see website.

PD6000

ProVu® Process Meter

DESCRIPTION

Input: 0-20 mA, 4-20 mA; 010 VDC (0-5, 1-5, 0-10 V); Modbus PV (slave)
Display: Dual-line 6-digit, 0.60" (15 mm) & 0.46" (12 mm)
Case: 1/8 DIN, NEMA 4X/IP65
Power: 85-265 VAC or 12/24 VDC option
Operating Temperature: -40 to 65°C

FEATURES

- Dual-scale for level applications - single input
- Signal input conditioning for flow & round horizontal tanks.
- 32-point, square root, or exponential linearization
- Multi-pump alternation control
- On-board digital input
- Programmable function keys
- Isolated 24 VDC @ 200 mA transmitter power supply
- Modbus® RTU communication protocol

OPTIONS
- 4-20 mA output with isolated 24 VDC @ 40 mA power supply
- 2 or 4 form C internal relays
- External 4-relay and digital I/O expansion modules
- RS-232, RS-485 serial communications
- SunBright display models

MODELS / EXTRAS

PD6000.....Starting at $299

Call for Options or see website.

Call us at 1-800-921-9494 or visit www.easthillsinstruments.com

PD7000 PD6830

ProVu® Temperature Meter

Input: Thermocouple J, K, T, E, R, S, B, N , C; RTD 100 Ω PT, 10 Ω Cu, 120 Ω Ni, 1,000 Ω Pt; Modbus PV (slave)
Display: Dual-line 6-digit: 0.60" (15 mm) & 0.46" (12 mm)
Case: 1/8 DIN, NEMA 4X/IP65
Power: 85-265 VAC or 12/24 VDC option
Operating Temperature: - 20 to 65°C

- 1° or 0.1° resolution
- Averages up to 10 RTD sensors
- Automatic cold junction compensation
- Interlock relays (force on)
- On-board digital input
- Programmable function keys
- Modbus® RTU communication protocol

OPTIONS
- 4-20 mA output with isolated 24 VDC @ 40 mA power supply 2 or 4 form C internal relays
- External 4-relay and digital I/O expansion modules RS-232, RS-485 serial communications
- SunBright display models

PD7000.....Starting at $299

Call for Options or see website.

ProtEX-RTP Pulse Input Flow Rate/Totalizer

Input: Pulse, open collector, NPN, PNP, TTL, switch contact, sine wave (coil), square wave, opto-isolated
Case: Smooth die-cast aluminum explosion-proof
Power: 9-30 VDC, output-loop, or battery
Operating Temperature: -40 to 75°C (-20 to 75°C battery)

- SafeTouch® through-glass button programming
- Up to 13-digit total with overflow display
- Mounts directly to flowmeter
- Automatic rate, total, & grand total unit conversions
- On-board data logging (1024 points)
- Two isolated open collector pulse outputs, up to 5 kHz
- Backlight standard on all models
- Displays 5-digit rate 0.7" (17.8 mm); 7 alphanumeric character total 0.4" (10.2 mm)

OPTIONS
- Isolated 4-20 mA output for rate, total, or grand total
- Isolated or non-isolated RS-485 with Modbus® Communications.

PD6830.....Starting at $859

Call for Options or see website.

1051

8 Decade Wide Range Resistance Box

1040

8 Decade Wide Range Resistance Box

DESCRIPTION

A precision low ohm resistance box designed for general laboratory work including platinum resistance thermometry. The 1051 is compact and durable, with range from 0.01Ω to 1MΩ and 0.1% best accuracy.

A popular wide range decade box covering 0 to 100MΩ in 1Ω steps, with 0.1% best accuracy. The 1040 is used in both industry and education, providing precision and reliability in all required applications.

FEATURES

Range / Resolution: 0 to 100MΩ / 1Ω steps

Decade	0.01Ω	0.1Ω	1Ω	10Ω	100Ω	1kΩ	10kΩ	100kΩ
Accuracy	±10%	±5%	±1%	±0.5%	±0.1%	±0.1%	±0.1%	±0.1%
Max Current	1A	1A	1A	0.3A	0.1A	33mA	10mA	3mA

Residual Resistance: Less than 250mΩ
Power Rating: 1 watt per resistor
Voltage Rating: Maximum 250V DC/AC RMS
Temperature Coefficient: 50ppm/°C
Color coded digits, safety terminals
W8.4 x H3.9 x D4.7" • Weight: 2.2 lbs

Range / Resolution: 0 to 100MΩ / 1Ω steps

Decade	1Ω	10Ω	100Ω	1kΩ	10kΩ	100kΩ	1MΩ	10MΩ
Accuracy	±1%	±0.5%	±0.1%	±0.1%	±0.1%	±0.1%	±0.1%	±1%
Max Current	0.5A	0.3A	100mA	30mA	3mA	0.3mA	30µA	3µA

Residual Resistance: Less than 250mΩ
Power Rating: 1 watt per resistor
Voltage Rating: Maximum 250V DC/AC RMS
Temperature Coefficient: 50ppm/°C
Color coded digits, safety terminals
W8.4 x H3.9 x D4.7" • Weight: 2.2 lbs

MODELS / EXTRAS

1051 Resistance Decade Box.....**$895**

1041 Resistance Decade Box.....**$695**
A low ohm decade box covering 0 to 1kΩ in 0.01Ω steps, with 0.5% mid scale accuracy (see first 5 decades of 1051 table).

Protective Rubber Boot.....**$44**
Carrying Case.....**$125**
NIST/UKAS Calibration Cert.....**$215**

1040 Resistance Decade Box.....**$895**

1061 : 6 Decade Resistance Box.....**$475**
Slim line design with in-line read-out that has a range of 0 to 1.2MΩ in 1Ω steps, accuracy ±1%

Protective Rubber Boot.....**$44**
Carrying Case (1040).....**$125**
NIST/UKAS Calibration Cert.....**$215**

1067
6 Decade Precision Resistance Box

A high accuracy resistance decade box ideal for PT100 simulation applications. Range is 0 to 12kΩ in 10mΩ steps, with ± 0.01% accuracy.

Range / Resolution: 0 to 12kΩ / 10mΩ steps
Accuracy: ± 0.01%
Resistance: Less than 10mΩ - Less than 1mΩ variation
Power Rating: 0.35 watt per resistor
Stability: 20ppm/year (>1Ω), 100ppm/year (<1Ω)
Voltage Rating: Maximum 200V DC/AC RMS
Insulation: Case to resistance terminals 2kV / 50Hz max
Temperature Coefficient: 10ppm/°C (20ppm/°C below 1Ω)
W13.8 x H2.5 x D3.5" • Weight: 2.4 lbs

1067 : 6 Decade Precision Resistance Box.....$1,675

1065 : 6 Decade Power Resistance Box.....$1,750
0 to 120kΩ in 0.1Ω steps, best accuracy is 1%, and each resistor has a 10 watt power rating.

NIST/UKAS Calibration Certificate.....$215

1070 | 1071
Decade Capacitance Boxes

Capacitance boxes suitable for applications in industry and education. The 1070 is a 5 decade model for 100pF to 100µF and the 1071 has 7 decades for 10pF to 100µF.

1070 Range / Resolution: 0 to 10 F / 100pF steps
1070 Residual Capacitance: Less than 38pF
1071 Range / Resolution: 0 to 100 F / 10pF steps
1071 Residual Capacitance: Less than 50pF
Accuracy: 1% (5% above 10µF on 1071)
Voltage Rating: Maximum 300V DC, 200V AC
Bi-polar working, color coded digits, safety terminals
W8.4 x H3.9 x D4.7" • Weight: 2.2 lbs

1070 : 5 Decade Capacitance Box.....$895
1071 : 7 Decade Capacitance Box.....$995

1053 : 4 Decade Inductance Box.....$1,295
Range is 0 to 10H in 1mH steps.

Protective Rubber Boot (1070, 1071).....**$44**
Carry Case (1070, 1071).....**$125**
NIST/UKAS Calibration Certificate.....$215

1006 | 1007
DC Millivolt Sources

1024
DC Current Calibrator

DESCRIPTION

High accuracy handheld millivolt sources primarily used for voltage injection or potentiometric voltage measurement (1007). Applications include thermocouple simulation and calibration of A/D converters and chart recorders.

A portable benchtop DC current source for calibration and test applications from nanoamp levels to 100mA. Applications include current transducer testing and calibration and linearity tests on digital and electronic current meters.

FEATURES

3 ranges up to 1V
Accuracy 0.02% of setting + 0.02% of range
Best resolution 1µV
20mA output current
Powered by 6 AA batteries
100 hours typical battery life
Short circuit and overload protected
Safety terminals
LED null measuring facility (1007)
H8.4 x W3.9 x D4.7" • Weight: 2.5 lbs

0 to 100mA output in 5 ranges
Accuracy 0.02% of setting
10ppm/hr stability
Up to 15V output drive
30ppm/°C temperature coefficient
Safety terminals
Null meter measures to 1µA resolution
Battery or mains operation
12 hours typical use between charges
W8.5 x H6.2 x D7.5" • Weight: 7.3 lbs

MODELS / EXTRAS

1006 DC Millivolt Source **$1,350**
1007 DC Millivolt Potentiometer and Calibrator...**$1,750**

1010 DC Voltage Calibrator.....**$2,250**
0.01µV to 10V in 5 ranges / Accuracy 0.02% of setting.

Protective Rubber Boot (1006, 1007).....**$44**
Carrying Case (1006, 1007).....**$125**
Rechargeable Battery Pack (1006, 1007).....**$160**
NIST/UKAS Calibration Cert (1006, 1007).....**$195**
Carrying Case (1010).....**$195**
NIST/UKAS Calibration Certificate (1010).....**$255**

1024 DC Current Calibrator.....**$2,585**

1021 Milliamp Source with Null Indicator.....**$1,725**
0 to 100mA output in 3 ranges / Accuracy 0.02% of setting +0.02% of rating.
1077 Milliamp Transducer Simulator.....**$1,995**
3 operating modes / 100mA source and load / 24V line mode / 0.02% accuracy.

Protective Rubber Boot (1021, 1077).....**$44**
Carrying Case (1024).....**$215**
NIST/UKAS Calibration Cert (1024).....**$230**
Carrying Case (1021, 1077).....**$125**
Rechargeable Battery Pack (1021, 1077).....**$160**
NIST/UKAS Calibration Cert (1021, 1077).....**$195**

1017

Voltage/Current/Resistance Calibrator

A portable multifunction calibrator with voltage, current, and resistance ranges. The 1017 is suitable for calibrating a wide range of instruments including thermocouples, transducers, transmitters, and platinum resistance thermometers.

DC Voltage 10nV to 100V
DC Current 100nA to 100mA
Resistance 10mΩ to 10kΩ
Accuracy 0.005% of setting + 0.002% of rng
1ppm setting resolution
Stability <5ppm/day, <25ppm/yr
Noise <2ppm (0.1 to 1Hz)
Deviation control Voltage and Current
Battery or mains operation
12 hours typical use between charges
W9.8 x H4.6 x D12.2" • Weight: 5.3 lbs

1017 Voltage/Current/Resistance Calibrator.....$2,825

NIST/UKAS Calibration Cert.....$290

1044

Voltage and Current Calibrator

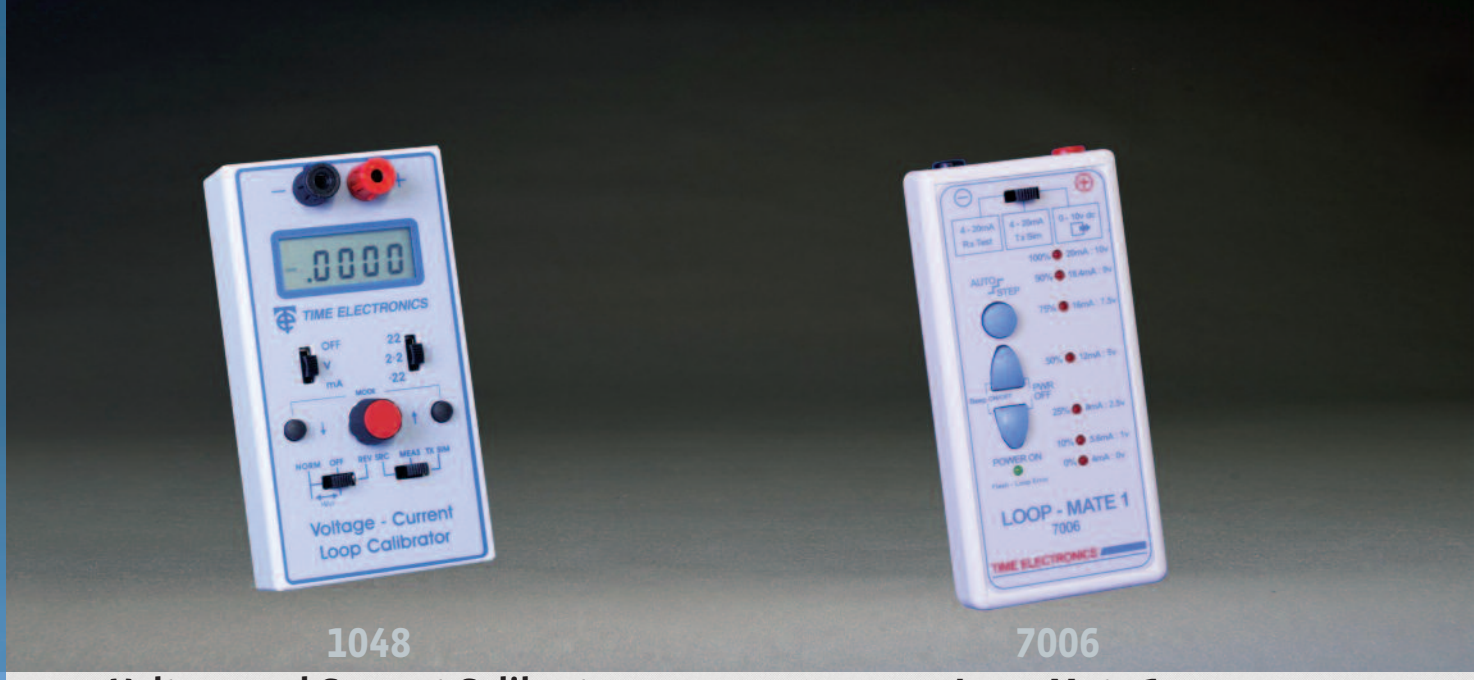
A precision handheld calibrator that can be used as a general purpose current and voltage source. High performance and ease of use make it suitable for test engineers, R&D, service, and calibration technicians.

Measure voltage and current
Source voltage and current
3 voltage ranges 0 to 20V
3 current ranges 0 to 20mA
Accuracy 0.05% of range
4.5 digit LCD display
Battery powered 9V PP3
28 hours typical battery life
Supplied with carry case
H5.5 x W3.0 x D2.0" • Weight: 0.7 lbs

1044 Voltage and Current Calibrator.....$975

1030 Voltage and Current Source.....$625
10mV, 100mV, 1V ranges / 10mA, 100mA ranges / Accuracy 0.1% of range.

110V Mains Power Supply (not charger) (1044).....**$85**
NIST/UKAS Calibration Cert (1044).....**$168**
Rechargeable Battery Pack (1030).....**$85**
NIST/UKAS Calibration Cert (1030).....**$128**



1048

Voltage and Current Calibrator

7006

Loop-Mate 1
Loop Simulator and Source

DESCRIPTION

A compact voltage, current, and process loop calibrator for engineering, manufacturing, test, and process control applications. The 1048 combines digital accuracy with simple analogue control and is well suited to plant operations such as powering control loops.

A cost-effective handheld loop simulator that provides 4 to 20mA or 0 to 10V loop signals. Features include manual and automatic step modes with audible indication that changes pitch as the output increases/decreases.

FEATURES

Source/measure voltage and current
3 source ranges: 0 to 22mA and 0 to 22V
3 measure ranges: 0 to 70mA and 0 to 50V
Accuracy 0.02% of range
Transmitter simulator/sink loop control
Output steps and ramps
Fine adjustment (inching)
Battery powered 9V PP3, 20 hours typical use
H5.5 x W3.0 x D2.0" • Weight: 0.7 lbs

4 to 20mA or 0 to 10V ranges
Set-points: 0, 10, 25, 50, 75, 90, 100% of range
Accuracy 0.1% of range
TxSim or RxTest modes
Internal loop supply, 25mA maximum
Auto-stepping mode: up/down/up, 0.5, 1, 2, 4, or 8 sec/step
Battery powered 9V PP3, 40 hours of typical use
Supplied with carry case
H5.5 x W2.5 x D1.2" • Weight - 0.4 lbs

MODELS / EXTRAS

1048 Voltage and Current Calibrator.....**$995**

7005 Voltage/Current/Loop Calibrator.....**$1,335**
Current measure: 125mA, source 50mA / Voltage measure: 25V, source 21V / Accuracy: Source 0.01% of setting, Measure: 0.01% of reading.

110V Mains Power Supply (1048).....**$85**
NIST/UKAS Calibration Cert (1048).....**$168**
NIST/UKAS Calibration Cert (7005).....**$245**

7006 Loop-Mate 1: Loop Simulator and Source.....**$410**

7007 Loop-Mate 2: Loop Signal Indicator.....**$365**
4 to 20mA, 0 to 10V, 0 to 50V ranges / LCD 4 digit display, mA, V, or % of range / Accuracy 0.05% of reading.

NIST/UKAS Calibration Cert.....**$162**

1049

PT100 Simulator

A handheld precision simulator for PT100 0.3850 platinum resistance elements used for accurate temperature measurement. High performance metal film resistors are used throughout which ensures a good temperature coefficient and long term stability.

-200°C to +800°C with 23 set points
Accuracy ± 0.3°C
Less than 30ppm/°C temperature coefficient
ITS-90 IEC60751
Exceeds class A
Passive resistance source
°F version available – 1050
1050 Range: -100°F to 1000°F, ± 0.5°F accuracy
Carrying Case Included
H4.4 x W2.4 x D2.1" • Weight - 0.4 lbs

1049 PT100 Simulator (°C).....$550
1050 PT100 Simulator (°F).....$550

7000 RTD Temperature Calibrator.....$1,495
Measure and simulate °C, °F, °K, and ohms / PT100 plus 7 other RTD types / Temp Accuracy 0.05°C (0.09°F) / Resistance Accuracy 0.03Ω.

NIST/UKAS Calibration Cert (1049. 1050).....**$215**
Mains Power Adaptor (7000).....**$95**
NIST/UKAS Calibration Cert (7000).....**$270**

1090

Multifunction Process Calibrator

A portable, key-press operation instrument that combines source and measurement functions for thermocouples, RTDs, mV and mA. The 1090 features a memory storage function that holds frequently used values.

Measures/simulates 8 thermocouple types,
PT 100-RTD, mV and mA
Displays units in °C, °F, µV/mV, or mA
Accuracy: Source 0.02% of range, 0.5°C.
Measure 0.05% of range, 0.7°C
Automatic or manual cold junction compensation
Inching and step functions with time configurable steps
Process loops 4 to 20mA and 0 to 50mA
Mains or battery operation, 60 hours typical use
Battery Charger and Carrying Case Included
H9.2 x W5.9 x D2.9" • Weight - 2.8 lbs

1090 Multifunction Process Calibrator.....$2,750

7050 Process/Thermocouple Calibrator.....$6,300
Measure and simulate V, mV, mA, and ohms with the direct readout simulation of thermocouples and RTDs in °C or °F units.

NIST/UKAS Calibration Cert (1090).....**$255**
NIST/UKAS Calibration Cert (7050).....**$595**

5025E
Multifunction Calibrator

5075
Precision Digital Multimeter

DESCRIPTION

A precision multi-product calibrator designed for wide calibration workload coverage at an affordable cost. Accurately test and verify both traditional and new test equipment with a calibrator that meets both technical and budget requirements.

A benchtop digital multimeter that combines high performance with simple operation. The 5075 easily measures from nanovolts to 10kV, from picoamps to 30 amps, from micro-ohms up to 1GΩ, from picofarads to 300μF, with up to 7 1/2 digit accuracy.

FEATURES

0 to 1050V AC/DC voltage
0 to 22A AC/DC current
10Ω to 1GΩ resistance
PT100 and Thermocouple simulation
Digital frequency
Capacitance
Optional adaptor for clamp meter calibration
RS-232 and USB interfaces
PC Virtual Control Software included
Supplied with 5 piece test lead set
W17.7 x H6.0 x D18.7" • Weight: 36.4 lbs

7 digit resolution
10nV to 10kV, 10pA to 30A
Resistance, Capacitance, and Frequency
18ppm accuracy/best 1 year
10 channel low thermal emf scanner option
PC/laptop control via EasyCal software
GPIB interface (USB adaptor available)
Rack mount kit option
W16.5 x H3.5 x D16.2" • Weight: 18.7 lbs

MODELS / EXTRAS

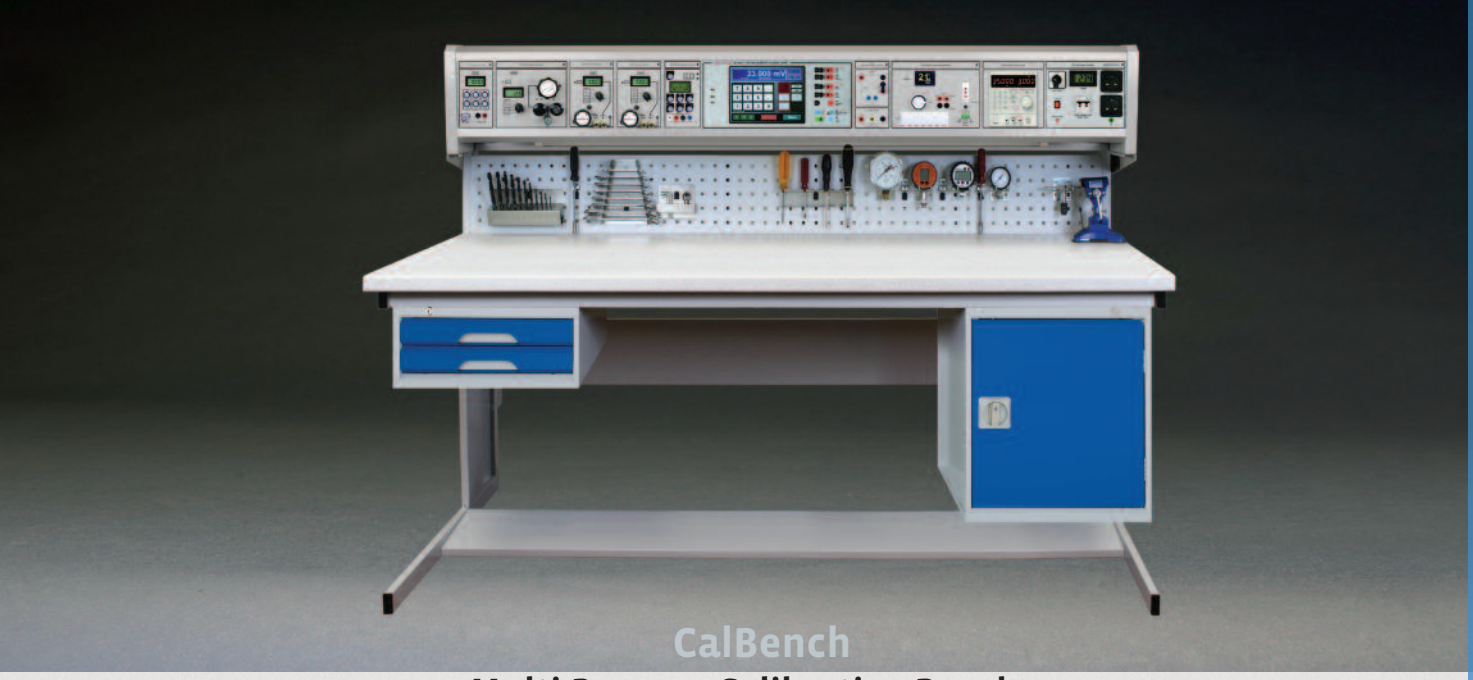
5025E Multifunction Calibrator.....Call For Pricing

5025 Multifunction Calibrator.....CFP
5051+ Multifunction Calibration System.....CFP

Common Options (5025E & 5025):
9770 Scope Calibration (1mV to 200V, 0.1Hz - 100 MHz)
9797 Power Calibration (0-20KW AC and DC)
9780 External Clamp Meter Adaptor
ECFLA EasyCal Calibration Software

5075 Precision Digital Multimeter.....Call For Pricing

5065 Digital Multimeter (6.5 digit).....CFP
5011 Resistance / Temperature Calibrator.....CFP
5018 Programmable DC/AC V/I Calibrator.....CFP
5045 Oscilloscope Calibrator.....CFP
5077 Power Calibrator.....CFP



CalBench

Multi-Purpose Calibration Benches

CalBench is the ultimate multifunction calibration station from Time Electronics. Each bench is custom-made to meet specific user requirements. Offering versatility and precision it is ideal for laboratories and workshops in need of multi-product testing that meets the highest industry standards.

A wide range of modules can be fitted to the primary console creating a highly flexible system that is both functional and easy to use. Further expansion can be achieved by adding the secondary console, mounted under the primary. Calibration modules cover electronic signal, temperature, loop, and pressure applications.

Common applications include the calibration of:
Pressure: Gauges, Calibrators, Transducers, Transmitters, Indicators, Switches, Valves.
Temperature & Loop: Sensors, Indicators, Thermocouple and RTD Transmitters, Calibrators, PRTs, Thermistors.
Electrical/Electronic: Multimeters, AC/DC Signal Sources, Clamp Meters, Tachometers, Ohmmeters, Decade Boxes.
Frequency: Signal Generators, Oscilloscopes, Frequency Meters, Timer Counters.
And Much More: Incorporate various test equipment for Flow, Level, Mass, Mechanical, Dimensional, and more.

CalBenches are used in test facilities across the world. It provides customers with a high performance system for the necessary applications within their respective industries.
Popular Industries: Petrochemical, Power Generation, Oil & Gas, Manufacturing, Nuclear, Automation, Automotive, Aeronautics, Transport, Telecomms, Pharmaceuticals, R & D, Metrology, Process, and Education.
Popular Locations: Processing Plants, Offshore Platforms, Refineries, Power Plants, Engineer Training Centers, Schools and Universities, Calibration Laboratories, R & D Labs, Manufacturing Plants.

Pressure: Precision calibrators, indicators, and controller modules. Ranges from vacuum to 600bar.

Power Supplies: Fixed and adjustable AC and DC power supplies, dual and programmable units.

Loop & Temperature: High accuracy loop calibrator modules with source, measure and sink functions. Temperature calibrators for measuring & simulating RTDs/thermocouples.

Multifunction Calibrator and DMM Modules: The 7051 provides high accuracy multi-product calibration and has an internal 6½ digit multimeter. Also available are the 5065B (6½ digit) and 5075B (7½ digit) DMM modules.

Additional Modules: Further modules include oscilloscopes, frequency counters, function generators, and harmonics analyzers. Custom design modules can be fitted allows the user to integrate a familiar instrument into their system.

External Options: Pneumatic and hydraulic calibration pumps, pressure gauges, dead weight testers, dry block calibrators, pressure test kits, hoses and connectors, test lead sets, solder stations, vices, and much more.

Accessories: To improve usability and create a more efficient workspace drawers, cabinets, PC holders, tool holders for the perforated back panel, and more can be added. All fittings meet U.S. standard.